Application No.: 10/518,530

Response Dated: November 30, 2007

Reply to Office Action Dated: May 29, 2008

Please amend the claims as follows:

**Listing of Claims:** 

1. (Cancelled).

2. (Currently amended): A biological process for producing carotenoids

including astaxanthin, the process comprising cultivating a microorganism which is

capable of producing carotenoids including astaxanthin and belonging to the genus

Xanthophyllomyces (Phaffia) in the presence of an inhibitor for of biosynthesis of

sterols from farnesyl pyrophosphate, a substrate for producing carotenoids including

astaxanthin, in an aqueous nutrient medium under aerobic conditions, and isolating the

resulting carotenoids including astaxanthin, from the cells of said microorganism or from

the cultured broth, wherein the astaxanthin content of the isolated carotenoids is greater

than that which results from cultivating in the absence of an inhibitor of biosynthesis of

sterols from farnesyl pyrophosphate.

3. (Original): The process according to claim 2, wherein the

microorganism is Xanthophyllomyces dendrorhous (Phaffia rhodozyma) ATCC96594.

4 - 12. (Cancelled.)

13. (Currently amended): The process according to claim 2, wherein the

inhibitor for of biosynthesis of sterols from farnesyl pyrophosphate is selected from the

group consisting of a squalene synthase inhibitors inhibitor.

14. (Withdrawn): The process according to claim 13, wherein the squalene

synthase inhibitor is selected from the group consisting of ammonium ion based

squalene synthase inhibitors.

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15. (Currently amended): The process according to claim 14 13, wherein the ammonium ion based squalene synthase inhibitor is selected from the group

consisting of a phenoxypropylamine-type squalene synthase inhibitors inhibitor.

16. (Previously presented): The process according to claim 15, wherein

the phenoxypropylamine-type squalene synthase inhibitor is selected from the group

consisting of [3-(3-allyl-biphenyl-4-yloxy)-propyl]-isopropyl-amine, N-isopropyl-3-(4-

acetamido-2-allylphenoxy) propylamine, N-methyl-N-isopropyl-3-(4-acetamide-2-

allylphenoxy) propylamine, N-cyclopentyl-3-(4-acetamido-2-allylphenoxy) propylamine,

N-cyclobutyl-3-(4-acetamide-2-allylphenoxy) propylamine, N-isopropyl-3-(2-allyl-4-

butyramidophenoxy) propylamine, N-isopropyl-3-(4-acetamido-2-chlorophenoxy)

propylamine, N-isopropyl-3-(4-acetamido-2-propylphenoxy) propylamine, and N-

isopropyl-3-(4-acetamido-2-allylphenoxy)-1-methylpropylamine, and biologically

acceptable salts thereof.

17. (Previously presented): The process according to claim 16, wherein

the phenoxypropylamine-type squalene synthase inhibitor is [3-(3-allyl-biphenyl-4-

yloxy)-propyl]-isopropyl-amine, or a biologically acceptable salt thereof, N-isopropyl-3-

(4-acetamido-2-allylphenoxy) propylamine or N-methyl-N-isopropyl-3-(4-acetamide-2-

allylphenoxy) propylamine.

18. (Currently amended): The process according to claim 2, wherein the a

concentration of the said inhibitor is within the range that gives less than 50 % reduction

of the cell growth under carotenoids producing conditions.

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19. (Currently amended): The process according to claim 18, wherein the concentration of the said inhibitor is within the range that gives less than 30 % reduction of the cell growth under carotenoids producing conditions.

20. (Previously presented): The process according to claim 2, wherein the cultivation is carried out at a pH in the range from 4 to 8 and at a temperature in the range from 15 to 26 °C, for 24 to 500 hours.

21. (Previously presented): The process according to claim 20, wherein the cultivation is carried out at a pH in the range from 5 to 7 and at a temperature in the range from 18 to 22 °C, for 48 to 350 hours.